



FortiAuthenticator - Release Notes

VERSION 5.0.0

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FortiAuthenticator 5.0.0 - Release Notes

Revision 1

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Introduction

This document provides a summary of new features, enhancements, support information, installation instructions and caveats, resolved and known issues for FortiAuthenticator™ 5.0.0, build 0012.

FortiAuthenticator is a User and Identity Management solution that provides Strong Authentication, Wireless 802.1X Authentication, Certificate Management, and Fortinet Single Sign-On.

For additional documentation, please visit:

<http://docs.fortinet.com/fortiauthenticator/>

Special Notices

TFTP boot process

The TFTP boot process erases all current FortiAuthenticator configuration and replaces it with the factory default settings.

Monitor settings for web-based manager access

Fortinet recommends setting your monitor to a screen resolution of 1600x1200. This allows for all the objects in the Web-based Manager to be viewed properly without need for scrolling.

Before any upgrade

Save a copy of your FortiAuthenticator unit configuration prior to upgrading. Go to *System > Dashboard > Status* and select *Download Backup File* to backup the configuration.

After any upgrade

If you are using the Web-based Manager, clear your browser cache prior to login on the FortiAuthenticator to ensure the Web-based Manager screens are displayed properly.

What's New

Before upgrading, review the following changes for impact to your unique deployment. Note that this list is not exhaustive but highlights the major feature enhancements in this release.

New features include:

Meru Parity: Multiple Guest Portals (293130)

FortiAuthenticator now allows the configuration of custom guest portals on a per customer or per AP/Controller basis. Portals are created from predefined templates, editable so as to allow full customization of the logos, color scheme, and basic styling.

Refer to the FortiAuthenticator 5.0 Administration Guide for more detailed information.

Meru Parity: Sponsor Portal (293131)

This feature introduces a new type of user account referred to as "Guest Users", which is akin to the existing "Local Users" with a restricted set of attributes.

The Guest Users are created, modified, and deleted from a new submenu item under *Authentication > User Management > Guest Users*.

There is a new "Sponsor" role for local and remote users. The "Sponsor" role is equivalent to an administrator with R/W permissions to the Guest Users submenu only. This includes a new built-in "Sponsor" permissions set.

Newly created account information can be sent to user email, SMS, or printed out individually.

Common use cases might include:

- Hotel receptionists creating room accounts
- Office staff creating visitor accounts

There are three guest user creation methods:

- **Express:** guest user accounts generated this way only have four attributes:
 - Sponsor
 - Username (eight random lowercase letters—must be unique from any other existing user account)
 - Password
 - Expiry
- **From CSV file:** each line of the CSV file contains the attributes info for one guest user. The values must be provided in the following order: *<first name>*, *<last name>*, *<email address>*, *<mobile number>*, *<group>*
- **Manual:** user attributes for each guest user are manually entered.

Meru Parity: Support RADIUS Accounting (293137)

RADIUS accounting now supports collection of accounting packets from various third party network devices. RADIUS Accounting will allow the implementation of per-user usage profiles based on either time or bandwidth usage.

- Statistics from collected RADIUS accounting packets is used to record and control per-user time and data usage
- Schedule-based access control has been introduced

Refer to the FortiAuthenticator 5.0 Administration Guide for more detailed information.

Meru Parity: LDAP Templates (298780)

The Remote LDAP Server configuration page has been updated.

The following predefined templates are now supported:

- Microsoft Active Directory
- OpenLDAP
- Novell eDirectory

New Challenge message to Support FTM Push for VPN Clients (408979)

There are two new Reply-Messages that FortiAuthenticator (FortiAuthenticator) can send to FortiGate (FGT) in the RADIUS ACCESS CHALLENGE from FortiAuthenticator. Each message is prefixed by an uneditable string followed by an editable string (i.e., replacement message in FortiAuthenticator):

1. If push is not available, FortiAuthenticator will send Prefix: "" followed by Default Replaceable String: "Enter Token Code". For example; "Enter Token Code".
2. If push is available, FortiAuthenticator will send Prefix: "+" followed by Default Replaceable String: "Choose FTM Push or Enter Token Code". For example; "+" + Choose FTM Push or Enter Token Code".

The FTM push notification is not sent after password validation unless the end-user requests it by responding with a blank (i.e. null string) token code to the first challenge request.

API: RADIUS attributes config for local users (417139)

The purpose of this feature is to add the ability to configure the RADIUS attributes of local users via the REST API.

API: Enforce password history (414613)

FortiAuthenticator supports local user password update/change via REST API but, previously, no restrictions were placed on how many times the same old password could be reused.

In 5.0, REST API can "Enforce password history". This is required so that end-users can have direct access to their FortiAuthenticator but are still allowed to update/change their password while the FortiAuthenticator enforces its password history policy.

Use Case

End-users will access middleware portal and make changes to password. This middleware would then make an API call to the FortiAuthenticator to update that end-user's password.

Custom RADIUS dictionaries (242422)

Added support for custom RADIUS VSA dictionaries. The following operations are supported from the GUI under **Authentication > RADIUS Service > Custom Dictionaries**:

- Add a dictionary for an new vendor (i.e. not in the built-in list)
- Update the dictionary of a built-in vendor
- Update a custom dictionary
- Delete a custom dictionary

The custom dictionaries' attributes are offered wherever RADIUS attributes can be configured. This includes:

- Local/Remote Users
- User Groups
- RADIUS Client Profiles
- SSO RADIUS Accounting Sources
- Accounting Proxy Rule Sets

Standardize the CLI (387330)

- Adjusted the CLI syntax to more closely match the CLI structure used by FOS. Initial setup procedure is now tree-structured.
- Added additional, commonly-required CLI debug commands.

Certs Management: Subject Alternative Name (421131)

This feature allows the administrator to specify a value for the DNS Subject Alternative Name extension when creating a user or local service certificate.

Extensions provided in the CSR when signing a certificate via the GUI (user or local service) or SCEP (user) are preserved.

Upgrade Instructions



Back up your configuration before beginning this procedure. While no data loss should occur if the procedures below are correctly followed, it is recommended a full backup is made before proceeding and the user will be prompted to do so as part of the upgrade process.

For information on how to back up the FortiAuthenticator configuration, see the [FortiAuthenticator Administration Guide](#).

Hardware & VM support

FortiAuthenticator 5.0.0 supports:

- FortiAuthenticator 200D
- FortiAuthenticator 200E
- FortiAuthenticator 400C
- FortiAuthenticator 400E
- FortiAuthenticator 1000C
- FortiAuthenticator 1000D
- FortiAuthenticator 2000E
- FortiAuthenticator 3000B
- FortiAuthenticator 3000D
- FortiAuthenticator 3000E
- FortiAuthenticator VM (VMWare, Hyper-V, KVM, and Xen)

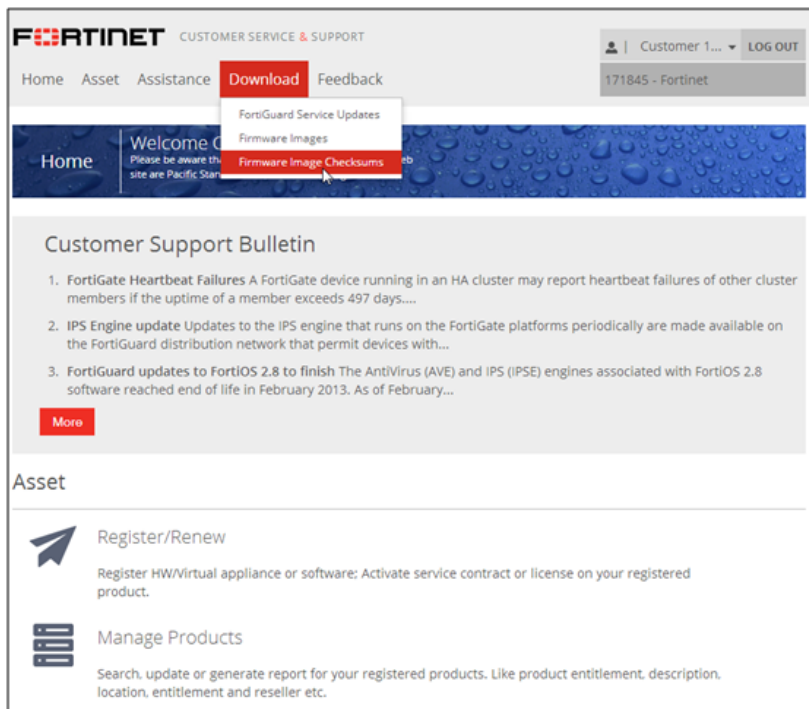
Image checksums

To verify the integrity of the firmware file, use a checksum tool to compute the firmware file's MD5 checksum. Compare it with the checksum indicated by Fortinet. If the checksums match, the file is intact.

MD5 checksums for software releases are available from Fortinet Customer Service & Support:

<https://support.fortinet.com>

Customer Service & Support image checksum tool



After logging in to the web site, in the menus at the top of the page, click *Download*, then click *Firmware Image Checksums*.

Alternatively, near the bottom of the page, click the *Firmware Image Checksums* button. (The button appears only if one or more of your devices has a current support contract.) In the *File Name* field, enter the firmware image file name including its extension, then click *Get Checksum Code*.

Upgrading from FortiAuthenticator v4.0

FortiAuthenticator™ 5.0.0 build 0012 officially supports upgrade from all versions of FortiAuthenticator 4.x.x.



Upgrading the FortiAuthenticator-3000D from 4.0.x to 4.1.x is not supported. The workaround for this model is to upgrade from any 4.0.x version directly to 4.2.0 or higher (skipping all 4.1.x versions).

If you install 4.1.x firmware on a FortiAuthenticator-3000D it stops responding. You can get the system running again by restoring valid firmware using the TFTP boot process.

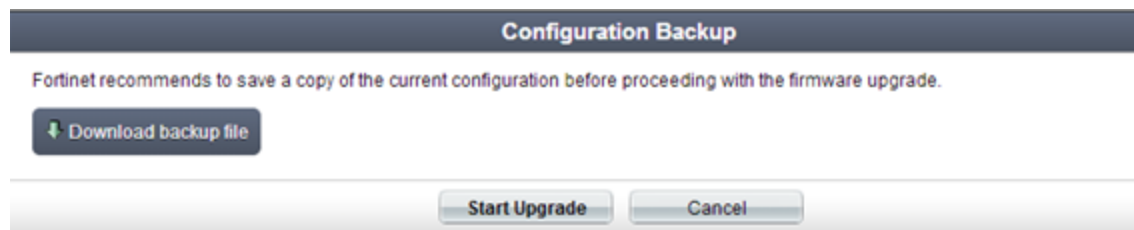
Firmware upgrade process

First, back up your configuration, then follow the procedure below to upgrade the firmware.

Before you can install FortiAuthenticator firmware, you must download the firmware package from the Customer Service & Support web site, then upload it from your computer to the FortiAuthenticator unit.

1. Log in to the Customer Service & Support web site at <https://support.fortinet.com>. In the Download section of the page, select the Firmware Images link to download the firmware.
2. To verify the integrity of the download, go back to the Download section of the login page, then click the *Firmware Image Checksums* link.
3. Log in to the FortiAuthenticator unit's Web-based Manager using the *admin* administrator account.
4. Go to *System > Dashboard > Status*.
5. In the *System Information* widget, in the *Firmware Version* row, select *Upgrade*. The *Firmware Upgrade or Downgrade* dialog box opens.
6. In the *Firmware* section, select *Choose File*, and locate the upgrade package that you downloaded.
7. Select *OK* to upload the file to the FortiAuthenticator.

Your browser uploads the firmware file. The time required varies by the size of the file and the speed of your network connection. When the file transfer is complete, the following message is shown:



It is recommended that a system backup is taken at this point. Once complete, click *Start Upgrade*.

Wait until the unpacking, upgrade and reboot process completes (usually 3-5 minutes), then refresh the page.

Product Integration and Support

Web browser support

The following web browsers are supported by FortiAuthenticator™ 5.0.0:

- Microsoft Internet Explorer versions 9 to 11
- Microsoft Edge 38
- Mozilla Firefox versions 18 to 54
- Google Chrome versions 28 to 59 (see note below)

Special Note for Google Chrome users



There is a known bug which exists in Google Chrome versions 44 and 45 where initially the GUI loads correctly, however after some time, pages will stop loading with the error on the chrome debug console *"Failed to load resource: net::ERR_INSECURE_RESPONSE"*.

This is a known issue and affects all sites using self-signed certificates and is fixed in Google Chrome version 46. Chrome bug reference:

<https://code.google.com/p/chromium/issues/detail?id=516808>

To work around this issue in the meantime, use a different browser or Upgrade to the Chrome Beta Channel.

Other web browsers may function correctly, but are not supported by Fortinet.

FortiOS support

FortiAuthenticator™ 5.0.0 supports the following FortiOS versions:

- FortiOS v5.2.11
- FortiOS v5.4.5
- FortiOS v5.6.0

Other FortiOS versions may function correctly, but may not be supported by Fortinet.

Fortinet agent support

FortiAuthenticator™ 5.0.0 supports the following Fortinet Agents.

- FortiClient v.5.x for Microsoft Windows (Single Sign-On Mobility Agent)
- FortiAuthenticator Agent for Microsoft Windows 2.0.2

- FortiAuthenticator Agent for Outlook Web Access 1.4.0
- FSSO DC Agent v.5.x
- FSSO TS Agent v.5.x

Other Agent versions may function correctly, but may not be supported by Fortinet.

For details of which Operating Systems are supported by each Agent, please see the Install Guides provided with the software.

Virtualization software support

FortiAuthenticator™ 5.0.0 supports VMware ESXi / ESX 4.0, 4.1, 5.0, 5.1, 5.5 and 6.0.

FortiAuthenticator™ 5.0.0 supports Microsoft Hyper-V 2010 and Microsoft Hyper-V 2012 R2.

FortiAuthenticator™ 5.0.0 supports Linux Kernel-based Virtual Machine (KVM) on Virtual Machine Manager and QEMU 2.5.0.

FortiAuthenticator™ 5.0.0 supports Xen Virtual Machine (for Xen HVM and AWS).



Support for HA in Active-Passive and Active-Active modes has not been confirmed on the FortiAuthenticator for Xen VM at the time of the release.

See [Appendix A: VM on page 1](#) for more information.

Third party RADIUS authentication

FortiAuthenticator uses standards based RADIUS for authentication and can deliver two-factor authentication via multiple methods for the greatest compatibility:

- RADIUS Challenge Response - Requires support by third party vendor
- Token Passcode Appended - Supports any RADIUS compatible system

FortiAuthenticator should therefore be compatible with any RADIUS capable authentication client / network access server (NAS). For more information, see the [FortiAuthenticator Two-Factor Authentication Interoperability Guide](#).

Resolved Issues

The resolved issues listed below may not list every bug that has been corrected with this release. For inquiries about a particular bug, please Fortinet Customer Service & Support:

<https://support.fortinet.com>.

This patch release fixes the following issues found in the release of 4.3.2.

Bug ID	Category	Description
420935	2FA	B0218: FTM Push Authentication not working when public IP/FQDN configured with alternate port
416246	Captive portal	Social Login
420177	Certs Mgmt	CSR is not being generated with a SHA-256 hash algorithm.
411691	KVM	KVM: No message on console when formatting the disk
412039	LDAP Users Sync	Remote LDAP user sync failed with group filter
415023	LDAP Users Sync	Remote LADP sync can't add all returned users.
391724	Login portal SSO	FortiAuthenticator SSO on login portal with LDAP slow for guest wireless users
422609	Password history	Password change by user will delete the password history for other users
433879	SAML IdP	Javascript error in SAML IdP login page
424302	SAML SP SSO	[SAML SP] Push notification isn't sent out when user logs in to SP which requires pwd+ftk when already logged in to SP with pwd
414563	SAML SP SSO	Azure groups aren't included in group data in SSO sessions
407405	SCEP	B0008 - Unable to renew the Certificate automatically when the auto-regenerate-days expired

Bug ID	Category	Description
416062	Syslog SSO	b0155: Logs from Cisco ACS can't be used as a source for FSSO
422886	System	FortiAuthenticator-3000E: recurring false positive logs about missing power supply unit
406501	GUI	Prevent a new RADIUS client from being created when the limit is reached
410192	GUI	Cannot delete remote LDAP server that was previously used for SAML SP group membership lookup
409764	GUI	SAML SP: Implicit group membership dropdown lists regular Groups, not SSO Groups
415911	GUI	[B0155] FortiAuthenticator become unresponsive after disable HA feature
408485	GUI	Authentication Activity widget causes high cpu/memory usage
407717	GUI	B0090: Error when order the Local users by Groups or Authentication Methods at User Management
409385	GUI	Descending Sorting comma-separated group names in User Management / Local Users is not accurate.
407134	GUI	Radius Profiles section does not expand to accommodate more than 12 profiles
407133	GUI	Deleting a Radius profile being used by Captive Portal deletes the entire Radius Client
394555	GUI	Radius client gets cloned even when required fields are left blank
397027	GUI	Top User Lockouts widget doesn't load in LB slave; receive 500 server error response
398737	GUI	Firmware version status GUI improvement
366174	GUI	[GUI] Prevent cert deletion if referenced somewhere in the config
408116	GUI	Should not be allowed to save Remote User Sync Rule if Certificate Binding CN field is blank when using a CA

Known Issues

This section lists the known issues of this release, but is not a complete list. For inquiries about a particular bug, please contact Fortinet Customer Service & Support:

<https://support.fortinet.com>

Bug ID	Category	Description
436525	2FA	User DN Field limit to 255 characters
414100	HyperV VM	B0081: FortiAuthenticator loses RADIUS connection after retrieving its connection between Hyper-V FortiAuthenticator and its virtual disks located on SAN.
392437	RADIUS auth	B0081: SSH FortiAuthenticator login fails using CHAP/MS.CHAP/MS.CHAPv2 authentication to Cisco ACS remote radius users.
437004	RADIUS auth	FGT Explicit proxy - NTLM issues seen between FGT and FortiAuthenticator
404797	REST API	Uncalled for Push is sent after invoking auth api call
416413	Self-service portal	When <i>Allow users to re-provision their FortiToken Mobile</i> is enabled remote-Idap users cannot login self-registration portal.
408883	SMS	SMS with third party vendors generates errors for other HTTP status code than 200.
439392	System	Occasional PSU voltage fault false-positives caused by some transient IPMI sensor readings.

Appendix A: FortiAuthenticator VM

FortiAuthenticator VM system requirements

The following table provides a detailed summary on FortiAuthenticator VM system requirements. Installing FortiAuthenticator VM requires that you have already installed a supported virtual machine (VM) environment. For details, see the *Install Guide for FortiAuthenticator VM* available at <http://docs.fortinet.com>.

VM Requirements

Virtual Machine	Requirement
Virtual Machine Form Factor	Open Virtualization Format (OVF)
Virtual CPUs Supported (Minimum / Maximum)	1 / 8
Virtual NICs Supported (Minimum / Maximum)	1 / 4
Storage Support (Minimum / Maximum)	60GB / 2TB
Memory Support (Minimum / Maximum)	512 MB / 64GB
High Availability Support	Yes

FortiAuthenticator VM firmware

Fortinet provides FortiAuthenticator VM firmware images in two formats:

- **.out**
Use this image for new and upgrades to physical appliance installations. Upgrades to existing virtual machine installations are also distributed in this format.
- **ovf.zip**
Use this image for new VM installations. It contains a deployable Open Virtualization Format (OVF) virtual machine package for initial VMware ESXi installations.

For more information see the FortiAuthenticator product datasheet available on the Fortinet web site, <http://www.fortinet.com/products/fortiauthenticator/index.html>.

Appendix B: Maximum values

This section lists the maximum number of configuration objects per FortiAuthenticator appliance that can be added to the configuration database for different FortiAuthenticator hardware and VM configurations.



The maximum values in this document are the maximum configurable values and are not a commitment of performance.

Hardware appliances

The following table describes the maximum values set for the various hardware models.

Feature		FortiAuthenticator Model				
		200E	400E	1000D	2000E	3000E
System						
Network	Static Routes	50	50	50	50	50
Messages	SMTP Servers	20	20	20	20	20
	SMS Gateways	20	20	20	20	20
	SNMP Hosts	20	20	20	20	20
Administration	SYSLOG Servers	20	20	20	20	20
	User Uploaded Images	30	100	500	1000	2000
	Language Files	50	50	50	50	50
Realms		20	80	400	800	1600
Authentication						
General	Auth Clients (NAS)	166	666	3333	6666	13333

Feature		FortiAuthenticator Model				
		200E	400E	1000D	2000E	3000E
	Users (Local + Remote) ¹	500	2000	10000	20000	40000
	User Radius Attributes	1500	6000	30000	60000	120000
	User Groups	50	200	1000	2000	4000
	Group Radius Attributes	150	150	600	6000	120000
	FortiTokens	1000	4000	20000	40000	80000
	FortiToken Mobile Licenses ²	200	200	200	200	200
	LDAP Entries	1000	4000	20000	40000	80000
	Device (MAC-based Auth.)	50	200	1000	2000	4000
	RADIUS Client Profiles	500	2000	10000	20000	40000
	Remote LDAP Servers	20	80	400	800	1600
	Remote LDAP Sync Rule	25	100	500	1000	2000
	Remote LDAP User Radius Attributes	1500	6000	30000	60000	120000
	FSSO & Dynamic Policies					
FSSO	FSSO Users	500	2000	10000	20000	200000 ³
	FSSO Groups	1000	1000	5000	10000	20000
	Domain Controllers	10	20	100	200	4000
	RADIUS Accounting SSO Clients	166	666	3333	6666	13333
	FortiGate Services	50	200	1000	2000	4000
	FortiGate Group Filtering	250	1000	5000	10000	20000
	FSSO Tier Nodes	5	20	100	200	400
	IP Filtering Rules	250	1000	5000	10000	20000

Feature		FortiAuthenticator Model				
		200E	400E	1000D	2000E	3000E
Accounting Proxy	Sources	500	2000	10000	20000	40000
	Destinations	25	100	500	1000	2000
	Rulesets	25	100	500	1000	2000
Certificates						
User Certificates	User Certificates	2500	10000	50000	100000	200000
	Server Certificates	50	200	1000	2000	4000
Certificate Authorities	CA Certificates	10	10	50	50	50
	Trusted CA Certificates	200	200	200	200	200
	Certificate Revocation Lists	200	200	200	200	200
SCEP	Enrollment Requests	2500	10000	50000	100000	200000

¹ Note that there is one metric used for the number of allowed users which is *Users*. Local Users and Remote Users share the same limit value. This enables Local Users **or** Remote Users to be equal to *Users* or for there to be a mixture of user types, however, the total number of Local and Remote Users cannot exceed the *Users* metric.

² *FortiToken Mobile Licenses* refers to the licenses that can be applied to a FortiAuthenticator, not the number of FortiToken Mobile instances that can be managed. The total number is limited by the FortiToken metric.

³ For the 3000E, the total number of concurrent SSO Users is set to a higher level to cater for large deployments.

VM appliances

The FortiAuthenticator-VM Appliance is licensed based on the total number of users and licensed on a stacking basis. All installations must start with a FortiAuthenticator VM-Base license and users can be stacked with upgrade licenses in blocks of 100, 1,000, 10,000 and 100,000 users. Due to the dynamic nature of this licensing model, most other metrics are set relative to the number of licensed users. The Calculating Metric column below shows how the feature size is calculated relative to the number of licensed users for example, on a 100 user FortiAuthenticator-VM Base License, the number of Auth Clients (NAS Devices) that can authenticate to the system is:

$$100 / 10 = 10$$

Where this relative system is not used e.g. for static routes, the *calculating metric* is denoted by a '-'. The supported figures are shown for both the base VM and a 5000 user licensed VM system by way of example.

Maximum Values - Virtual Machines

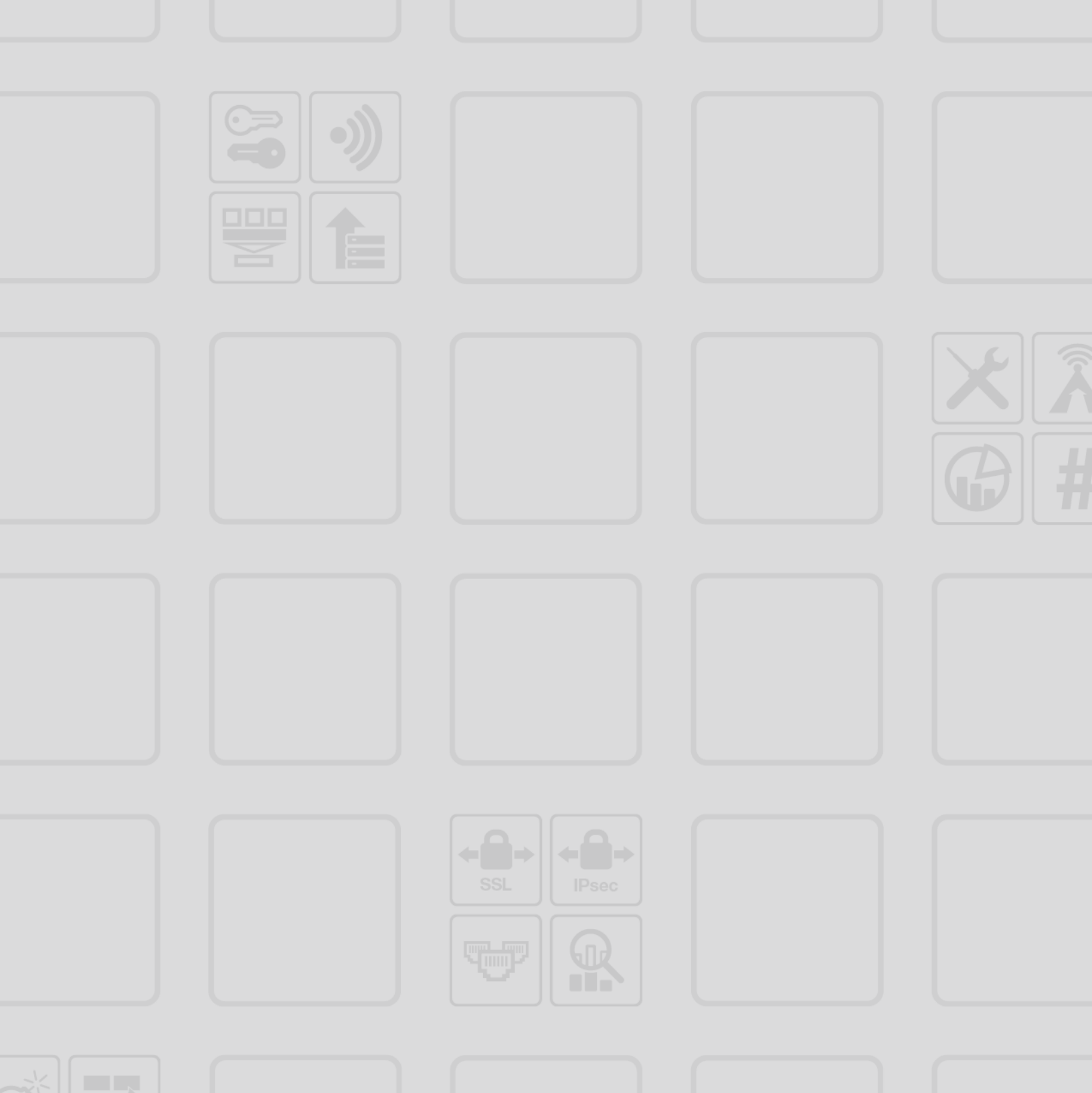
Feature		Model			
		Unlicensed VM	Calculating Metric	Base VM (100 Users)	Example 5000 licensed User VM
System					
Network	Static Routes	2	50	50	50
Messaging	SMTP Servers	2	20	20	20
	SMS Gateways	2	20	20	20
	SNMP Hosts	2	20	20	20
Administration	SYSLOG Servers	2	20	20	20
	User Uploaded Images	5	Users / 20	5	100
	Language Files	5	50	50	50
Authentication					
General	Auth Clients (NAS)	3	Users / 3	33	1666
User Management	Users (Local + Remote) ¹	5	*****	100	5000
	User RADIUS Attributes	15	Users x 3	300	15000
	User Groups	3	Users / 10	10	500
	Group RADIUS Attributes	9	Users x 3	300	15000
	FortiTokens	10	Users x 2	200	10000
	FortiToken Mobile Licenses (Stacked) ²	3	200	200	200
	LDAP Entries	20	Users x 2	200	10000
	Device (MAC-based Auth.)	1	Users / 10	10	500

Feature		Model			
		Unlicensed VM	Calculating Metric	Base VM (100 Users)	Example 5000 licensed User VM
	RADIUS Client Profiles	3	Users	100	10000
	Remote LDAP Servers	4	Users / 25	4	200
	Remote LDAP Sync Rule	1	Users / 20	5	250
	Remote LDAP User Radius Attributes	15	Users x 3	300	15000
FSSO & Dynamic Policies					
FSSO	FSSO Users	5	Users	100	5000
	FSSO Groups	30	Users / 2	50	2500
	Domain Controllers	3	Users / 100 (min=10)	10	50
	RADIUS Accounting SSO Clients	3	Users / 3	33	1666
	FortiGate Services	2	Users / 10	10	500
	FortiGate Group Filtering	30	Users / 2	50	2500
	FSSO Tier Nodes	3	Users / 100 (min=5)	5	50
	IP Filtering Rules	30	Users / 2	50	2500
Accounting Proxy	Sources	3	Users	100	1000
	Destinations	3	Users / 20	5	250
	Rulesets	3	Users / 20	5	250
Certificates					
User Certificates	User Certificates	5	Users x 5	500	25000
	Server Certificates	2	Users / 10	10	500

Feature		Model			
		Unlicensed VM	Calculating Metric	Base VM (100 Users)	Example 5000 licensed User VM
Certificate Authorities	CA Certificates	3	Users / 20	5	250
	Trusted CA Certificates	200	200	200	200
	Certificate Revocation Lists	5	200	200	200
SCEP	Enrollment Requests	5	Users x 5	2500	10000

¹ Note that there is one metric used for the number of allowed users which is *Users*. Local Users and Remote Users share the same limit value. This enables Local Users **or** Remote Users to be equal to *Users* or for there to be a mixture of user types, however, the total number of Local and Remote Users cannot exceed the *Users* metric.

² *FortiToken Mobile Licenses* refers to the licenses that can be applied to a FortiAuthenticator, not the number of FortiToken Mobile instances that can be managed. The total number is limited by the FortiToken metric.



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